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10/828,760

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Joseph R. Warren

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EXAMINER

STRANGE, AARON N

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/828,760 | Applicant(s) WARREN ET AL. | |
| | Examiner AARON STRANGE | Art Unit 2453 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Examiner would like to note that the present application has been reassigned to a new Examiner.

Response to Arguments

2. Applicant's arguments with respect to claims 1-12, and 14-28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

3. Claim 12 objected to because of the following informalities: There appears to be a typographical error "to busy to" in line 4. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 7, 10-12, 14, 17-21 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phaal (US 6,006,269) in view of Chang et al. (US 6,035,324) further in view of Bucur et al. ("The Influence of the Structure and Sizes of Jobs on the Performance of Co-Allocation").

6. With regard to claim 1, Phaal discloses a method comprising:

an act of computer system sending a data request to the messaging server, the data request requesting that message related data for a user of the computer system be returned from the messaging server to the computer system (clients request web pages from the server)(col. 5, ll. 17-24);

an act of receiving a server response responsive to the data request from the messaging server, the server response including an adaptively generated wait hint generated at the messaging server (response message includes a time when the client message can expect to be processed)(col. 6, ll. 12-29),

the adaptively generated wait hint being an indication that the messaging server was unable to process the data request and indicating that the computer system is to wait a specified wait time before sending another data request requesting the message related data for the user (messages are re-submitted after wait time has expired)(col. 6, ll. 25-49),

the adaptively generated wait hint generated by a wait hint generation algorithm at the messaging server (scheduler and deferral manager collectively calculate a wait time)(col. 6, ll. 24-30),

the wait hint generation algorithm configured to adaptively generate a wait hint each time the data request requesting message related data for the user is received at the messaging server but not processed (deferral message is generated each time a message is deferred)(col. 6, ll. 17-29),

an act of waiting the specified wait time before resending the data request requesting message related data for the user to thereby reduce the load on the messaging server (col. 7, ll. 4-11); and

an act of resending the data request requesting message related data for the user subsequent to waiting the specified wait time (col. 7, ll. 7-11).

While Phaal discloses that messages may be deferred multiple times and that the priority level of deferred messages is increased each time a deferral occurs (col. 13, ll. 44-48), Phaal fails to specifically disclose that the wait hints are generated based on the number of times a message has been deferred or that the message may only be deferred a specified number of times.

Chang teaches scheduling client requests using an exponential backoff procedure that increases the wait time between requests each time a request fails to be processed (col. 9, ll. 54-60). Exponential backoff algorithms are well known in the art and advantageously reduce the burden on the network when there is a long term failure (Chang; col. 9, ll. 57-60). One of ordinary skill in the art would have been able to use Chang's teaching to modify Phaal's deferral algorithm to increase the wait time each time a message is deferred, and would have recognized advantages of doing so, such as reducing the load on the server when too many requests are being received at one time.

In an analogous art of task scheduling, Bucur teaches maintaining a counter that keeps track of the number of times a task is "jumped over" (deferred) in lieu of another task, and forcing acceptance of the job when the counter exceeds a chosen limit (§2.3).

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One of ordinary skill in the art would have been able to use Chang's teaching to modify Phaal's deferral algorithm to place a maximum limit on the number of times a message can be deferred, and would have recognized advantages of doing so, such as preventing the task from deferred forever.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Phaal's deferral algorithm to increase the wait time each time a message is deferred and set a cap on the times a message can be deferred., since it would have allowed an overloaded server to reduce the number of messages being processed at any one time while ensuring that all messages are eventually processed.

7. With regard to claim 7, Phaal further discloses that waiting a specified wait time in accordance with the adaptively generated wait hint comprises an act of utilizing the wait hint at a client side module that attempts to improve user experience when interacting with the messaging server (wait time is displayed to user to keep them informed of the status of their request, improving the user experience)(col. 6, l. 61 to col. 7, l. 3).

8. With regard to claim 10, the combination of Phaal, Chang and Bucur discloses receiving a second server response with a second wait hint having a different wait time than the first response. Phaal teaches multiple deferrals of a single request (col. 13, ll.

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44-48) and Chang teaches changing the wait time each time a request is deferred (col. 9, ll. 56-57).

9. With regard to claim 11, Phaal further discloses an act of receiving message related data for the user subsequent to resending the data request; and
an act of updating a message interface to reflect that the message related data was received (after the wait time has expired, the client will automatically retrieve the originally requested web page and display it)(col. 7, ll. 4-11).

10. With regard to claim 12, Phaal further discloses an act of causing a message interface at the computer system to indicate that the data request is being processed so as to not give the user an impression that the messaging server was too busy to process the data request, even though the messaging server returned an adaptive wait hint in response to the data request (the informative message tells the computer that an appointment has been scheduled and provides feedback regarding when the appointment will arrive, thereby indicating to the user that the request is being processed in a delayed fashion, but will be processed nonetheless)(col. 6, l. 56 to col. 7, l. 11).

11. Claims 14, 17-21 and 25-28 are rejected under the same rationale as claims 1, 7 and 10-12, since they recite substantially identical subject matter. Any differences

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between the claims do not result in patentably distinct claims and all of the limitations are taught by the above cited art.

12. Claims 2-5, 8, 9, 15, 16, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phaal (US 6,006,269) in view of Chang et al. (US 6,035,324) further in view of Bucur et al. ("The Influence of the Structure and Sizes of Jobs on the Performance of Co-Allocation") further in view of Mukundan et al. (US 2007/0016639).

13. With regard to claims 2, 3, 8 and 9, while the system disclosed by Phaal, Chang and Bucur shows substantial features of the claimed invention (discussed above), it fails to disclose that the data request is a synchronization request or RPC call.

In the same field of endeavor, Mukundan teaches sending a synchronization request (RPC call) to a server and notifying the client that the processing will exceed a threshold length of time (fig. 5A; fig. 42; ¶0110, ¶0154, ¶0532). This would have been an advantageous addition to the system disclosed by Phaal, Chang and Bucur since it would have allowed synchronization requests to be deferred when they would exceed a threshold length of time.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow deferral of other types of data requests, including synchronization requests and RPC calls.

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14. With regard to claims 4 and 5, while the system disclosed by Phaal, Chang and Bucur shows substantial features of the claimed invention (discussed above), it fails to disclose that the server response comprises a buffer in response to an RPC call that includes an error code and a wait hint.

In the same field of endeavor, Mukundan teaches sending a synchronization request to a server and notifying the client that the processing will exceed a threshold length of time, wherein the request is a RPC call (fig. 5A; fig. 42; ¶0110, ¶0154, ¶0532). Likewise, the server replies using a RPC call. It is obvious that the reply includes a buffer with an error code to let the client know it is busy because it updates a progress bar for example to inform the user of the time left for processing (¶531).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow deferral of other types of data requests, including synchronization requests and RPC calls, and incorporate the features necessary to do so.

15. Claims 15, 16, 23 and 24 are rejected under the same rationale as claims 2-5, 8 and 9, since they recite substantially identical subject matter. Any differences between the claims do not result in patentably distinct claims and all of the limitations are taught by the above cited art.

16. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phaal (US 6,006,269) in view of Chang et al. (US 6,035,324) further in view of Bucur et al.

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("The Influence of the Structure and Sizes of Jobs on the Performance of Co-Allocation") further in view of Official Notice.

17. With regard to claim 6, while the system disclosed by Phaal, Chang and Bucur shows substantial features of the claimed invention (discussed above), it fails to disclose the wait time is randomized to reduce the chances of resending the next request at the same time as other requests, although Chang does disclose the use of an exponential backoff algorithm (col. 9, ll. 54-55).

The Examiner takes Official Notice that exponential backoff algorithms using randomized wait times were old and well known in the art at the time the invention was made. The reduces probability of simultaneous resubmission of requests was a well known advantage of such algorithms and using a randomized wait time would have prevented deferrals from all arriving at the same time upon resubmission, overloading the server again.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to randomize the wait time used in the backoff algorithm to prevent the deferred requests from being submitted at the same time, overloading the server again.

18. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phaal (US 6,006,269) in view of Chang et al. (US 6,035,324) further in view of Bucur et al.

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("The Influence of the Structure and Sizes of Jobs on the Performance of Co-Allocation") further in view of Garg et al. (US 2002/0138613).

19. With regard to claim 22, while the system disclosed by Phaal, Chang and Bucur shows substantial features of the claimed invention (discussed above), it fails to disclose of generating a wait hint based on the connection speed of the client that sent the data request.

Garg teaches sending a request to the server and the delaying the request based on the connection speed (amount of bandwidth) (§0016 line(s) 19-21) while sending back the amount of time the request will wait before resending the request (§0018 line(s) 11-12). This would have been an advantageous addition to the system disclosed by Phaal, Chang and Bucur since it would have allowed requests that require large amounts of bandwidth (i.e., streaming video) to be deferred until the server could free up sufficient resources.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to defer requests based on the connection speed of the client to ensure that the server has time to reserve sufficient bandwidth the service the request.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON STRANGE whose telephone number is (571)272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron Strange/
Examiner, Art Unit 2453